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ENERGY TRANSITION POLICY AND URBAN CARBON LOCK-IN: NEW INSIGHTS FROM CHINA'S NEW ENERGY DEMONSTRATION CITY

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Abstract

The energy transition policy is crucial for adjusting energy supply and demand structures and responding to climate change. Breaking carbon lock-in (CLI) is essential for achieving energy substitution. This study employs a difference-in-difference model to assess the effect of New Energy Demonstration City (NEDC) on CLI using panel data from 260 prefecture-level cities from 2009-2020. The results indicate that: (1) The NEDC can reduce the degree of CLI in demonstration cities. (2) The NEDC's impact on CLI is primarily achieved through increased urban low-carbon technology innovation and industrial upgrading. (3) The NEDC has a more significant inhibitory effect on CLI in central and western cities, non-old industrial cities, and cities with high levels of human capital. This study uncovers the inherent logic of how the NEDC affects CLI, offering cities opportunities to mitigate CLI through NEDC policy, and serving as a reference for promoting the comprehensive green transformation of economic development.

Key words: carbon lock-in, industrial upgrading, low-carbon technology innovation, new energy demonstration city

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